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ABSTRACT

A study used data for the 1987 calendar year from the 1986 and 1987 panels of the Survey of Income and Program Participation (SIPP) to examine the impact of union membership on women's wages and job tenure. The data set included 17,200 sample members, representing about 79 million workers, aged 16-64. The study mapped the distribution of union women and men workers across the economy in terms of occupation, industry, and size of firm and by education level. This map illustrated the changing face of unions as women become a higher proportion of their membership and reflected the changes in union membership from blue-collar to white-collar occupations, from manufacturing to professional specialty industries, and from high school to college graduates. Findings helped explain the increase in union membership among higher wage women workers between 1984-87 and suggested union membership was increasingly characterized by a new diversity. Statistical regression techniques were used to estimate the importance of union membership, relative to other factors, in increasing hourly wages for women. Unions increased women's wages by 12 percent; for union members, unions decreased the wage gap between men and women from 32 to 25 percent; and unions appeared to especially benefit minority women who gained 13 percent per hour. Unionized women workers had twice as many years on the job as nonunion workers. (Appendixes include 15 references and a technical appendix.) (YLB)

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WHAT DO UNIONS DO FOR WOMEN?

Paper presented at the conference, "Labor Law Reform: The Forecast for Working Women," sponsored by the Women's Bureau, U.S. Department of Labor

By:
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What Do Unions Do For Women?

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WHAT DO UNIONS DO FOR WOMEN?

EXECUTIVE SUMMARY

Previous researchers see the decline in union membership as a cause for concern because of the importance of unions for increasing living standards and productivity and for decreasing wage inequality. Most of their studies examine unionization among a largely male, blue collar workforce. This study shows that decline in union membership is also cause for concern for women workers because union membership, or coverage under a collective bargaining agreement, is associated with higher wages and longer job tenure for women (compared to their non-union peers) and a smaller pay gap between male and female workers. Unions also especially benefit minority women (and men), particularly blacks and Hispanics. They also bring up wages relatively more for those with less education than for the better educated and for those with fewer years on the job than for those with more years on the job.

Union workers earn more than non-union workers; with women benefitting especially from the relative effect of union membership. In 1987, union women earned an average of $2.50 more per hour than did their non-union counterparts (for a gross premium of 38 percent). When human capital, work-related, and demographic characteristics are held constant, the independent net impact of unionization on women's hourly wages is still strong and positive. White women received a net benefit of 91 cents and women of color received a net benefit of 87 cents, for union wage premium of 12 percent and 13 percent respectively. Unionization also decreases the wage gap between women and men. When other factors are held constant, union women earn 75 cents for every $1.00 earned by union men, while non-union women earn only 68 cents for every $1.00 earned by non-union men.

Among all women workers, union members have more that twice the median years of job tenure than do their non-union counterparts (eight as compared to four years, respectively, when gross differences are compared). Low-wage women workers have substantially lower job tenure than their higher wage counterparts, but unionized low-wage women workers have an additional year of job tenure compared to low-wage non-union women workers. Thus, although low-wage union women do not receive a wage premium that moves them into the category of high-wage workers, they do gain job security. And employers may reap productivity gains from these more stable, unionized women workers. When human capital, work, and demographic characteristics are held constant, union women gain a net additional 1.2 years of job tenure. In percentage terms, men and women benefit equally from union coverage.

If unions are important for women workers, some positive trends are apparent. The number of union women workers is still growing; unionization has shifted to areas (the public sector, nursing, teaching) where women work disproportionately. And the analysis presented here shows that even the *rate* of unionization, not only the number of union workers, has also increased among high wage women workers between 1984 and 1987. In fact, women's increased representation in unions raises issues of diversity that need to be reflected in union policies and leadership.

As the increased proportion of unionized women in service occupations and industries change the face of labor unions, new issues and styles of organizing and bargaining have emerged. The issues and models of employee/employer relations that emerge from the increased participation of women in unions can have a vital impact on the content and style of collective bargaining and the ability of unions to both increase workers' living standards and to increase productivity. But, to continue to change the content and style of collective bargaining, women need to play a larger part in union leadership. Women need to be actively involved in developing issues, organizing, and bargaining strategies if the current 86 percent of women who are not organized or represented by collective bargaining agreements are to benefit from the increased wages, pay equity, and job security that unionization can bring.

INTRODUCTION

Currently the U.S. has the lowest rate of union membership among all industrialized countries except France. In a recent article Rothstein (1993) suggests that without labor law reform unions may represent only 5 percent of the U.S. labor force in the year 2,000. Is this prediction good news or bad news for the economy and for the living standards of citizens? How in particular would this prediction, if it came to pass, affect women workers?

Many economists argue that declines in union monopolies and the resulting declines in union wage premiums result in economic growth. Capital can be freer to move into new markets, to create new, more flexible jobs, and to increase efficiency and productivity (Hirsch 1991; Kochan et al. 1986). Other economists argue that the decline in unionization has negative effects for both workers and the economy. The higher wages generated by union membership not only result in higher living standards for workers, but also encourage investment in technologies and work processes that enable workers to be more efficient and productive. In addition to stimulating higher wages, unionization tends to reward seniority and reduce turnover. Increased seniority and decreased turnover in turn result in increased productivity from a more loyal and experienced workforce (Freeman 1990; Belman 1989; Freeman and Medoff 1984).

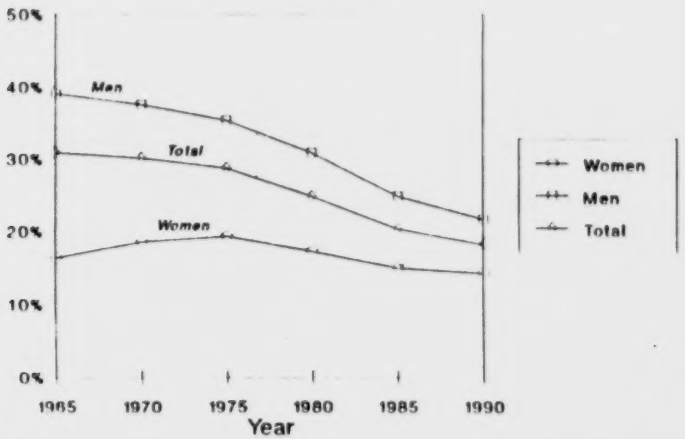
Further, researchers who argue for the economic value of unions also suggest that the fall in union membership has contributed to the growth of inequality in the U.S. wage structure (Freeman 1993). Katz (as cited by Rothstein 1993:34) claims that fully one-fifth of the increase in wage differentials during the 1980s can be explained by the decline in union membership. Because of the importance of union membership for increasing living standards and productivity and for decreasing wage inequality, these authors see the decline in union membership as a cause for concern.

Unfortunately, much of the analysis of the role of unions in increasing wages and productivity is based on studies of largely male, blue collar workers in manufacturing industries. During the last decades, along with the general decline in union membership, the map of unionization by industry, by occupation, and by gender has changed. The unions with declining membership are largely male, blue-collar unions, while the unions with increasing membership are more likely to include occupations that are predominantly female and white collar (Eaton 1992).

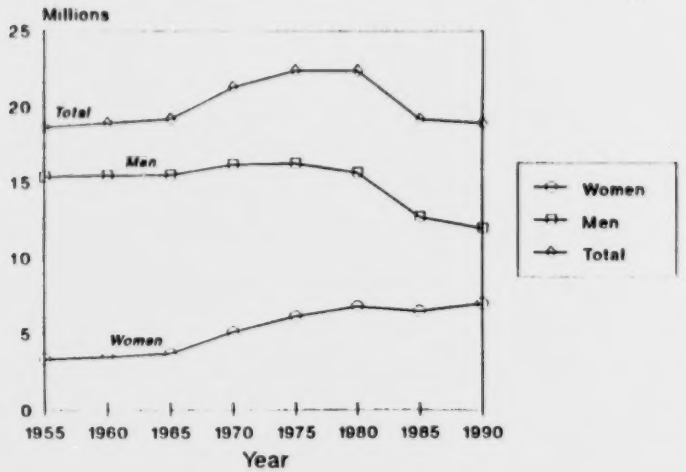
Overall, since 1980, the increases in membership in some unions have been smaller than the decreases in others; both the absolute number of union workers and the proportion of the U.S. workforce that is unionized have fallen. In 1992, only 16 percent of workers were union members, with an additional 2 percent represented by unions or associations of which they are not members (Employment and Earnings, January 1993: 238). As Figure 1, Panel A, shows, the proportion of male workers who are unionized fell from 39 percent in 1965 to 22 percent in 1990. Among women, union membership has nearly kept pace with the rapidly growing female labor force. The proportion of women workers who are union members increased from 16.3 percent in 1965 to 19.3 percent in 1975 and then fell to 14.2 percent in 1990. Figure 1, Panel B, shows the change in absolute numbers of union members for male and female workers and for the total. Even as the proportion of all workers who are union members fell, the total number of union members increased up through 1980. The number of women workers has continued to increase since 1980, but that gain has been more than offset by the decline in the number of men members. Because of the decline in the number of union men and the increase among women, women are currently 37 percent of organized labor's membership, a higher percentage than at

Figure 1:
Trends in Union Membership, 1955-1990

A. Union Membership as a Percent of Female, Male and Total Workers



B. Union Membership By Year



Source: Institute for Women's Policy Research estimates based on published and unpublished data from the Current Population Survey, the Bureau of Labor Statistics, and the Women's Bureau, U.S. Department of Labor.

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any time in the U.S. labor movement's history.[1]

This paper first maps the distribution of union women and men workers across the economy in terms of occupation, industry, and size of firm, and by education level. It examines the impact of union membership on women's wages and job tenure. It explores whether being unionized contributes to increased wages, controlling for variation in other factors that affect earnings, such as additional years of education and work experience, family status, occupation and industry, and so on. Because our previous research showed that women are disproportionately concentrated in low wage jobs and that workers in low wage jobs tend to have shorter job tenure than higher wage workers, we also look at whether unionized low-wage workers have greater job tenure than non-unionized low-wage workers employed in similar occupations and industries. If that is the case, then encouraging collective bargaining can lead to increased job tenure, productivity, and wages in currently low productivity, low-wage service industries, where women are disproportionately employed. The paper concludes with a discussion of the implications of the new diversity in union membership for union policy.

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[1] No consistent series of data on union membership or on union membership by gender exists. Up through 1980, the Bureau of Labor Statistics collected membership data from unions and, beginning in 1970, from associations. Between 1973 and 1980, the Current Population Survey (CPS) asked a sample of individual workers (in May of each year) about their union status. Since 1983, the CPS asks the sample's outgoing rotation group each month about their union status and, if not a member, whether they are represented by a labor organization that bargains collectively over wages or working conditions. For the purposes of this overview, the authors developed a new series that attempts to achieve consistency by adjusting the different data sets. For example, because, for the years in which both union-reported membership data and individual-reported membership data exist, the individually reported data are lower, we adjusted post 1980 data upward. We also adjusted pre-1970 data upward to include estimates for professional association members. Our estimates are for membership, not representation status. The labor force base to which we compare union membership in order to estimate union density is the civilian wage and salary employed labor force 16 and over, including agricultural workers.

DATA SET AND SAMPLE SIZE

The data that are used in this study are for the 1987 calendar year from the 1986 and 1987 panels of the Survey of Income and Program Participation (SIPP) for all workers (civilian, nonagricultural, wage and salary), ages 16 to 64 (excluding teenagers living with their parents) who worked for at least 7 months and 500 hours during the calendar year. This data set, developed by IWPR, includes 17,200 sample members, representing about 79 million U.S. workers, or 66 percent of the total U.S. civilian labor force (16 and over) in 1987 or 80 percent of the employed, wage and salary, nonagricultural labor force.

In order to focus our analysis on committed, adult workers who, unlike retired workers or teenagers living with their parents, are likely to be relying on employment as their main source of income, we excluded those with limited work effort (fewer than 7 months or 500 hours of work) during the year, as well as older and younger workers.[2] The data for the regression analysis is limited to the 1987 SIPP panel because certain key variables were missing from the 1986 SIPP panel.[3]

FINDINGS

WHO ARE THE UNION WORKERS?

As noted, the overall percent of unionized workers has steadily declined in the U.S. from its post-World War II high (see Figure 1). Although the percentage of union members who are

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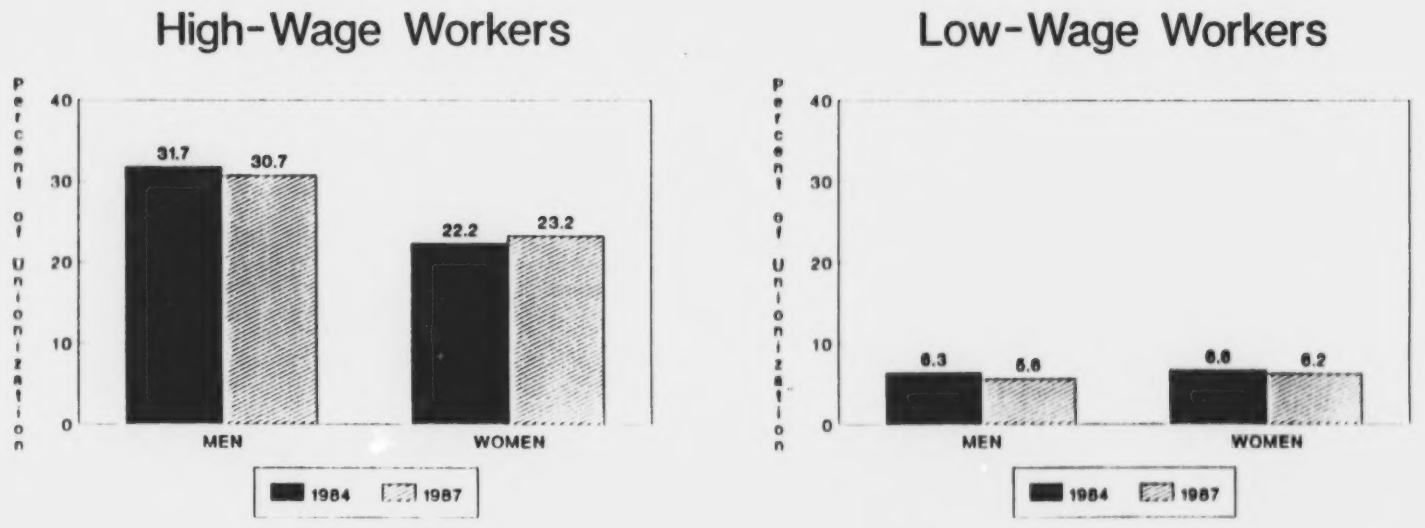
[2] We also found that, in the SIPP data set, union status was missing for fully 50 percent of the "less committed" workers, those in our sample who had worked 500 hours but not necessarily in 7 out of 12 months. Since differences between union and nonunion workers are the focus of our investigation, we excluded this group of 2,736 less committed workers for whom union status was unreliable.

[3] The regression analysis also includes individuals working fewer than 7 months (but at least 500 hours).

women is at an all time high, this results from unionization rates among women declining more slowly than those among men. Figure 2 shows, however, that unionization is not declining among all categories of women workers. Comparison of IWPR's SIPP-based data sets for 1984 and 1987, in which workers can be identified as low-wage workers (worked at least 7 months at or below an average hourly wage equal to the annual poverty level for a family of four if worked full-time full-year; this wage was $5.80 in 1987) or higher wage workers (worked at least 7 months, no more than one of which was at an average hourly wage that would qualify as low-wage), shows that the unionization rate among higher wage women workers actually increased by one percentage point (from 22 to 23 percent) during this period in the mid 1980s. Although the unionization rate among high wage men is about 10 percentage points higher than that among high wage women workers, the unionization rate for these men declined by one percentage point between 1984 and 1987. Among low-wage workers (those earning less than $5.80 per hour in 1987 dollars), unionization rates are substantially lower (at about six percent) and do not vary significantly by gender; they declined slightly between 1984 and 1987 for both women and men.

As discussed, union density has declined in largely male, blue collar industries and increased in some of the more female-dominated occupations and industries. How have these changes affected the current distribution of unionized workers and what differences do we see between the distribution of unionized male and female workers? Figure 3, Panels A, B, C, and D, which present the distribution of unionized workers (with at least seven months and 500 hours of employment in calendar year 1987) by occupation, industry, firm size, and education level, show dramatic differences between the genders. To some extent, the gender-based differences in union membership simply reflect the different places women and men hold in the labor market, but they also reflect differential rates of unionization across the economy, with "male" areas

Figure 2:
Unionization Rates of High-Wage Versus Low-Wage Workers, 1984 and 1987



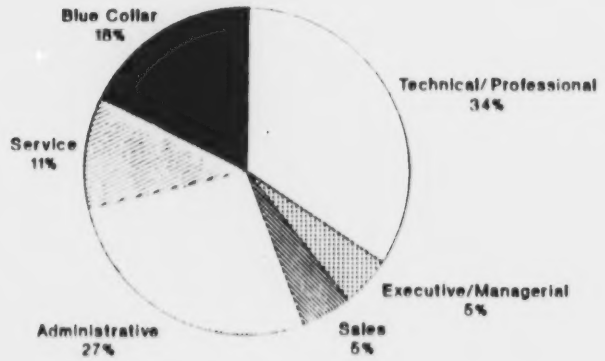
Note: Low-Wage workers are those who earned an average hourly wage of less than $5.80 for at least 7 months out of the year; high-wage workers are those who earned an average hourly wage of less than $5.80 only 1 month or never.

Source: Institute for Women's Policy Research calculations based on the 1984, 1986, and 1987 Survey of Income and Program Participation.

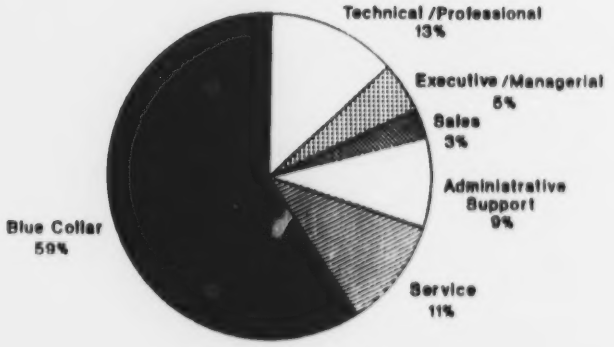
Figure 3:
Where Are The Union Workers?
(Those working at least 7 months of the year)

A. By Occupation:

WOMEN

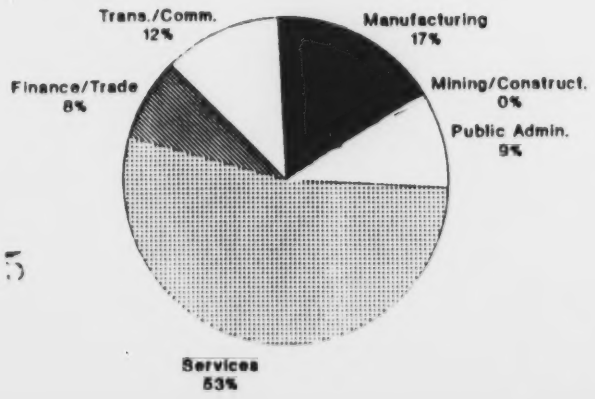


MEN



B. By Industry:

WOMEN



MEN

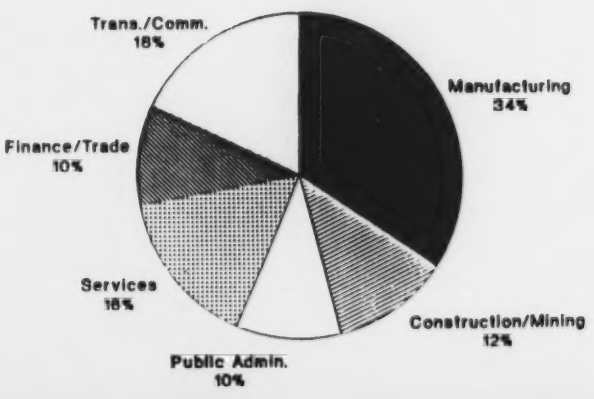
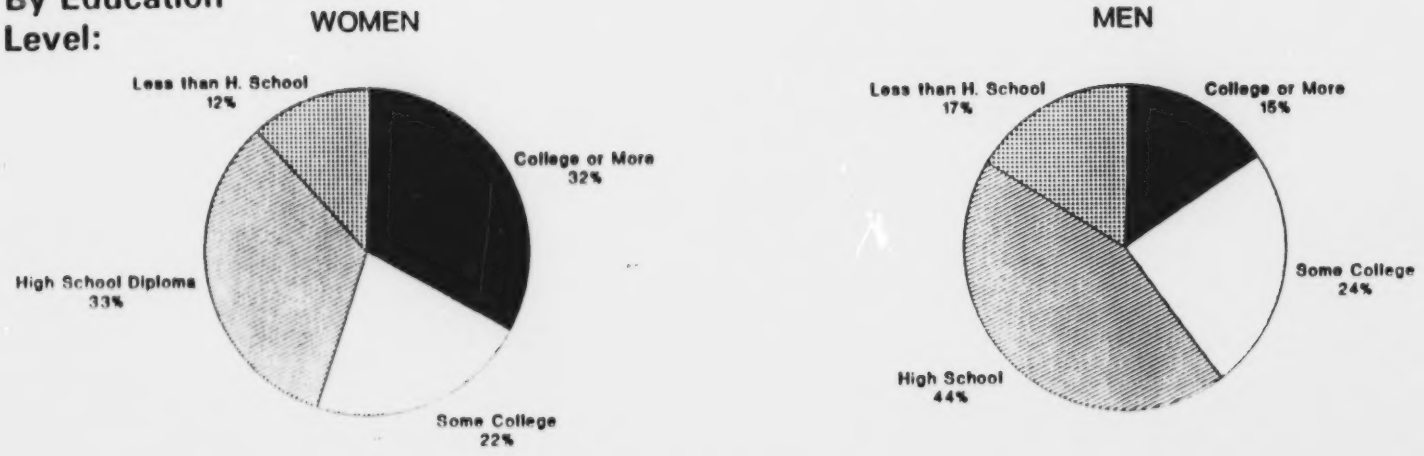


Figure 3: Continued

C. By Firm Size:

D. By Education Level:



Source: Institute for Women's Policy Research tabulations based on the 1986 and 1987 Survey of Income and Program Participation.

being generally more unionized than "female" areas. Finally, they reflect differential rates of unionization of men and women in similar economic areas, for example, male blue collar workers have a higher rate of unionization than female blue collar workers. For more detailed information on the distribution of unionized workers by occupation, industry, firm size and education level, see Appendix Tables 1 - 4.

OCCUPATION

Figure 3, Panel A, shows that the modal male union worker is blue collar: 59 percent of all unionized men are employed as precision production, craftsmen, and repairmen; operators, assemblers, and fabricators; or transport workers, handlers, and laborers. Blue collar men are more unionized than men in other occupations (60 percent of male union members are blue collar workers but only 44 percent of all employed male workers in our study are employed in this occupational category -- see Appendix Table 1). Only 13 percent of unionized male workers are found in the next largest occupational category of professional and technical workers. Unlike blue collar workers, these skilled white collar workers are under-represented among unionized male workers (only 13 percent of male union members are skilled white collar workers while 16 percent of employed male workers fall into this occupational category).

Among women, the largest group of unionized workers are employed as professional or technical workers. In contrast to men, women in this occupational category are more heavily unionized than women in other occupations compared to their representation in the employed workforce (34 percent of all women union members are in professional or technical occupations, while only 19 percent of all women workers in our study work in these occupations). Within this category, professional specialty workers are especially likely to be represented by unions (32 percent of unionized women workers are in professional specialty occupations in contrast to 15

percent of all employed women in our study). This sub-category of women workers provides the largest share of women members to unions of any single occupational category.

The next largest category of unionized women workers consists of the administrative support occupations with more than one-quarter of unionized women workers coming from this occupational category. Although this is the single largest women's occupational category (with 31 percent of all women workers in our study in this category), administrative support workers are somewhat under-represented among unionized women workers. In contrast to this large, relatively unorganized category of white collar workers, the small portion of women employed in blue collar occupations are relatively well-organized (representing 18 percent of women union members but only 12 percent of the female workforce -- see Appendix Table 1). Despite their relatively intensive unionization, blue collar women constitute a small portion of women in unions. In contrast to men, unionized women are most likely to be found among professional workers.

INDUSTRY

Although fewer than three out of 10 male workers, who worked for at least seven months and 500 hours during calendar year 1987, were employed in manufacturing, this industry still provides the largest share of unionized male workers--34 percent (see Figure 3, Panel B). The next largest share is provided by transportation, communications, and public utilities. The third largest share of unionized male workers come from the service industries, where they are slightly under-represented when compared to their representation in the service industries workforce (16 percent of male union members compared to 20 percent of the male workforce -- see Appendix Table 2).

In striking contrast, over half (54 percent) of unionized women workers come from

service industries and almost all of these women are from the professional and related service industries (including health services and hospitals, education, social services, and other professional services). Women in this industrial sub-category are 35 percent of all women workers in our sample, those employed for at least seven months and 500 hours during the calendar year, but they contribute 51 percent of the women workers in unions.

In contrast to men, a substantially smaller share of unionized women workers comes from manufacturing industries. This is largely a result of the smaller share of women workers in manufacturing; 15 percent of employed women workers and 17 percent of unionized women workers are found in this industrial category (compared to 34 percent of unionized workers for male manufacturing sector workers).

The third largest category of unionized women workers is located in transportation, communications, and public utilities. Although only five percent of employed women workers are found in this category, they contribute 12 percent of the unionized female workforce. (Spalter-Roth and Hartmann, 1992, provide a detailed discussion of women's unionization in the communications industry).

Finally, the fourth largest industrial category of unionized workers for both men and women is public administration, with about 10 percent of unionized men and women located in this sector.

FIRM SIZE

Unions have organized successfully in larger workplaces using an industrial model; not surprisingly, therefore, Figure 3, Panel C, shows that workers in firms with more than 100 employees constitute by far the largest share of union members, over 80 percent for both men and women. Both male and female employees in larger firms are substantially more likely to be

members of unions, with women union members even more likely to be in larger firms than their male peers. Somewhat fewer than two-thirds of women employed for at least seven months and 500 hours during the calendar year work in firms with 100 or more employees, while almost nine out of 10 female union members work in firms of at least this size (see Appendix Table 3).

EDUCATION

Figure 3, Panel D, which displays the education level of union members, shows dramatic differences between union men and union women. Previous studies of union men have suggested that those men with less education benefit the most from unions. For men, Figure 3, Panel D, shows that the largest group of union members (44 percent) has a high school diploma but no college education. Appendix Table 4 shows that men with high school diplomas are over-represented among union members, while those with less than a high school diploma and those with some college are about equally represented. Those with a college degree are under-represented among male union workers; almost one-quarter of male workers employed for at least seven months and 500 hours have a college degree, but only 15 percent of male union members have this level of education.

Compared to men, the findings for women workers are reversed. High school graduates are somewhat under-represented among unionized women workers (38 percent of employed women workers compared to 33 percent of unionized women workers). In contrast, college graduates are more heavily unionized -- about one out of five employed women have college degrees, but one out of three union women have such degrees.

The map of union men and women by occupation, industry, firm size, and educational level illustrates the changing face of unions as women become a higher proportion of their membership. It reflects the changes in union membership from blue collar to white collar

occupations, from manufacturing to professional specialty industries, and from high school to college graduates. The findings help us to explain the increase in union membership among higher wage women workers between 1984 and 1987. These findings should not, however, lead us to ignore the large number of union women (and men) who do not conform to this profile of the new union member. Rather, these findings suggest that union membership is increasingly characterized by a new diversity -- a diversity that needs to be reflected in union policies and union leadership.

THE IMPACT OF UNIONIZATION ON WOMEN'S WAGES

Union workers have historically earned more than non-union workers. The relative size of the union/non-union pay gap (or the union wage premium) found in any particular study, however, depends on the data set used, the employment status of the workers included (e.g. full-time or part-time workers), the calendar years covered, and the statistical techniques used to control for other factors along with union status (Anderson, et al., 1990). Here, we first examine the gross effects of union membership on women's wages by comparing all union women with all non-union women. Because other factors, such as occupation, industry, and hours of work, are known to have a significant impact on women's wages, we then go on to present the net impact of unionization on wages taking these other factors into account. The first set of results are referred to as "uncontrolled" results and the second set are referred to as "controlled" results.

UNCONTROLLED RESULTS

The data presented in Table 1 are based on SIPP data for workers who were employed

Table 1: Median Hourly Wage for Union and Non-Union Workers, 1987
(Uncontrolled Results)

	All	Non-Union	Union	Union Wage Premium*	Premium as % of Non-Union**	Sample Size
WOMEN - ALL	$6.98	$6.65	$9.15	$2.50	37.6%	8,294
White	7.09	6.79	9.30	2.51	37.0%	6,867
Black	6.54	6.00	8.51	2.51	41.8%	726
Hispanic	6.05	5.54	8.29	2.75	49.6%	506
Asian American	6.97	6.73	8.19	1.46	21.7%	195
MEN - ALL	$10.50	$9.84	$12.03	$2.19	22.3%	8,939
White	10.93	10.44	12.21	1.77	17.0%	7,606
Black	7.58	6.71	11.21	4.50	67.1%	571
Hispanic	7.79	7.11	10.51	3.40	47.8%	532
Asian American	9.31	8.65	12.05	3.40	39.3%	230

* The difference between union and non-union median hourly wages.
** The union wage premium as a percent of the non-union median hourly wage.

Source: IWPR tabulations based on the 1986 and 1987 Survey of Income and Program Participation.

for at least seven months and 500 hours during calendar year 1987. Table 1 shows that the relative premium earned by unionized women workers is larger than that earned by unionized male workers. In 1987, union women earned an average of $2.50 more per hour than did non-union women, for an uncontrolled wage premium of 38 percent. In contrast, the gap between union and non-union men is only $2.19, for an uncontrolled wage premium of 22 percent.

The larger union premium for women may be partially explained by the differences in the occupational and educational distributions of union women versus non-union women, compared to union men versus non-union men. As we noted above, among women, professional and college educated workers are the most likely to be union members, whereas among men, blue collar and high school educated workers are the most likely to be union members. (Later, we calculate the union wage premium, statistically controlling for these other factors, such as educational differences between male and female union and non-union members.)

Appendix Table 5 (The Distribution of Union and Non-Union Workers by Average Hourly Wages) shows that more than one third of all women workers (employed for at least seven months and 500 hours during 1987) earned less than $5.80 per hour, called a "poverty wage" for a family of four (because if a worker earned this wage full-time, year-round she or he would earn an annual amount just equal to the official government poverty level for a family of four). The wage earning experiences of union and non-union women differed considerably in this low-wage category. In contrast to the 40 percent of non-union women who earned poverty wages, only 16 percent of union women earned these low wages. Although non-union men earned more on the average ($9.84 per hour) than did union women ($9.15 per hour), a smaller percentage of union women (16 percent) earned less than $5.80 hour than did non-union men (21 percent). Unions clearly provide a higher wage floor, bringing up the bottom of the wage

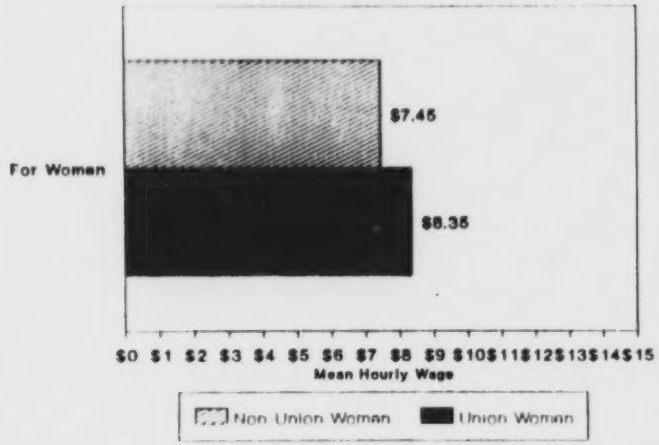
distribution for unionized women workers. An analysis of wage dispersion among union and non-union men and women shows that unions also reduce the distance between wage extremes. For non-union women, wage dispersion, (the range between the first quartile wages and the third quartile wages, shown as Q3 minus Q1 in Appendix Table 5) which was $4.57, equalled over two-thirds of the median wage ($6.65), while for union women, it equalled only 55 percent of the median wage. For men the difference between union and non-union wage dispersion was even greater. Among non-union men, wage dispersion was over 80 percent of the median wage, but only 42 percent of the median among union men. These findings indicate that unions not only raise the wage floor, but they also decrease inequalities among their members.

Table 1 also shows that unions tend to decrease the wage gap between men and women. The wage difference between union men and women is $2.88 per hour ($12.03 - $9.15 in 1987 dollars), while it is $3.19 per hour between non-union men and women ($9.84 - $6.65). Thus, union women earn an average of 76 cents for every dollar earned by union men, while non-union women earn only 68 cents for every dollar earned by non-union men. (Part of this difference is likely due to the higher education level of union women versus union men, described above; regression results discussed below control for this and other differences and present calculations of the gender-based wage gap for union and non-union workers net of these differences -- see Figure 4.)

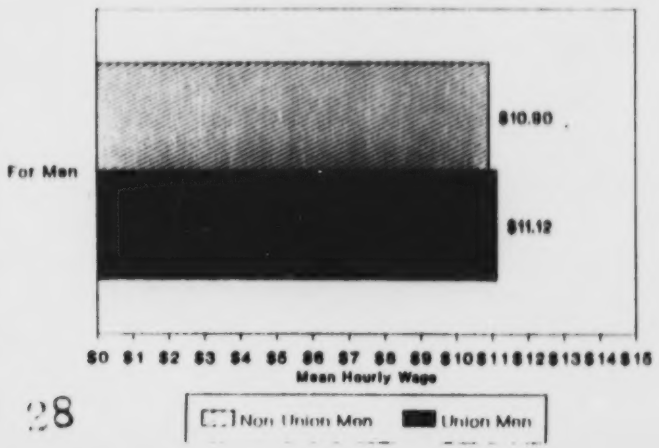
In earlier research (IWPR, 1989), we showed that in 1984 union membership was especially beneficial for black and Hispanic men and women. Table 1 replicates these findings for 1987 for the uncontrolled case. Here again, we find that black and Hispanic men and women especially benefit from union membership compared to their non-union peers (and compared to whites). The uncontrolled union wage premium is highest for black men, at 67 percent, second

Figure 4:
The Impact of Unions on Women's and Men's Wages
(Controlled Results)

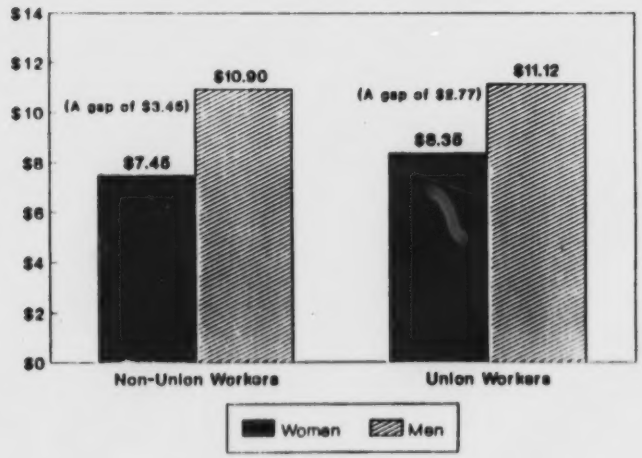
A. What Unions Do For Women's Wages



B. What Unions Do For Men's Wages



C. What Unions Do For Sex Equity



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Source: Institute for Women's Policy Research calculations based on regression analysis of the 1987 Survey of Income and Program Participation.

highest for Hispanic women at 50 percent, third highest for Hispanic men at 48 percent and fourth highest for black women at 42 percent. White women earn a union wage premium of 37 percent, and white men earn a union premium of only 17 percent. It is important to note that although white men have the smallest union premium, they have the highest wages regardless of union status. On average, white men are more likely to earn a living wage without unions. What unions appear to do is to raise the living standard for men and women of color (and for white women) who are much less likely to earn a living wage in non-union jobs (see Table 1).

CONTROLLED RESULTS

In this study, we use statistical regression techniques, specifically an ordinary least squares (OLS) model, to estimate the importance of union membership, relative to other factors, in increasing hourly wages for women (referred to as controlled results). The regression analysis is used to determine the relative effect of factors such as demographic, human capital, and work related characteristics in predicting average hourly wages in 1987. The purpose of this analysis is to investigate whether union membership, or coverage under collective bargaining agreements, has a significant net impact on wages when other factors are held constant, that is, when women who are similar, except for union membership are compared. The data for this analysis are limited to the 1987 SIPP panel; the 1986 SIPP panel is excluded because of the lack of key variables. In addition, Asian Americans are excluded because their labor market patterns do not correspond well to either white women or women of color and because there are too few of them to analyze separately.

The OLS model predicting hourly wage in 1987 largely replicates the model used in our

study of the 1984 SIPP (IWPR 1989).[4] Table 2 provides the results of the predictive equations for 1987. The parameter estimates listed in Table 2 are estimates of the dollar amounts each variable independently contributes to the average hourly wage earned in 1987. Since the model for all women workers showed that being a woman of color negatively impacted the hourly wages of an individual (it decreased hourly wages by 53 cents), separate models were calculated for white women and women of color. All estimated parameters which we are reasonably certain are different from 0 (statistically significant at the .05 level) are marked with asterisks.

The Relative Impact of Unions. Results of this regression model are graphically displayed in Figure 4, Panels A, B, and C, which compares the impact unionization has on women and men's wages, when controlling for human capital characteristics, work related information, and demographic information.[5] Panels A and B show that the relative premium earned by unionized women workers is larger than that earned by unionized male workers. In 1987, union women earned an average of 90 cents per hour more than non-union women, for a wage premium of 12 percent. This means that the wages of a woman union member are 12 percent higher than a woman who is not a union member even when these two women have the same years of schooling and work experience, work for the same size firm, live in the same region, and work in the same industry and occupation for the same number of hours. In contrast, the gap between union and non-union men is only 22 cents, for a wage premium of 2 percent. Panel C confirms the earlier uncontrolled findings and shows that, when other factors

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[4] Hourly Wage is calculated by summing the income earned from the primary job across all months of 1987 and dividing by the total hours worked at the primary job in 1987. There are a few minor differences between this model and the previous study's model. For example, the Metropolitan Sampling Area (MSA) was not available for the 1987 SIPP panel, so the region of residence was substituted.

[5] The regression results for male workers are available from the authors.

Table 2: Predicting Average Hourly Wage for Women Workers by Race, 1987
(Controlled Results)

Independent Variables	Parameter Estimates: All Women	White Women	Women of Color
Intercept	$ −0.10	$ −0.35	$ 0.34
Union Status	0.90 ***	0.91 ***	0.87 **
HUMAN CAPITAL			
Years of Education Completed	0.17 ***	0.18 ***	0.16 ***
Years of Work Experience	0.18 ***	0.18 ***	0.17 ***
Work Experience Squared	−0.00 ***	−0.00 ***	−0.00 **
Any Job Training	0.30 **	0.27 *	0.50 *
JOB CHARACTERISTICS			
Hours Worked / 1,000	0.67 ***	0.63 ***	0.90 ***
Work Site greater than 100 Employees	1.04 ***	1.12 ***	0.69 **
Firm Size less than 25 Employess	−0.34 *	−0.32 *	−0.46
OCCUPATIONS (Professional/Managerial)			
Technical, Sales, and Administrative	−1.54 ***	−1.58 ***	−1.29 ***
Service	−2.24 ***	−2.22 ***	−2.24 ***
Blue Collar	−2.36 ***	−2.36 ***	−2.36 ***
INDUSTRY (Manufacturing)			
Mining	3.83 ***	3.80 ***	−−
Construction	0.39	0.48	−0.48
Transportation & Other Public Utilities	3.43 ***	3.36 ***	3.63 *
Wholesale Trade	0.24	0.65	−2.18 *
Retail Trade	−1.15 ***	−1.20 ***	−0.88 *
Finance, Insurance and Real Estate	0.54 *	0.59 *	0.25
Service, excluding Personal	−0.71 ***	−0.70 **	−0.80 *
Personal Service	−1.43 ***	−1.79 ***	−0.74
Public Administration	0.08	0.35	−0.69
DEMOGRAPHICS			
Age	0.22 ***	0.24 ***	0.14 *
Age Squared	−0.00 ***	−0.00 ***	−0.00
Black or Hispanic Women	−0.53 ***		
Married With Spouse Present	−0.05	−0.17	0.37
At Least 1 Child under 6	0.09	0.23	−0.37
REGION (Western Resident)			
Southern Resident	−0.71 ***	−0.68 ***	0.74 **
Northern Resident	0.44 **	0.41 *	0.67 *
Midwestern Resident	−0.76 ***	−0.77 ***	−0.50
Adjusted R−Squared	0.3739	0.3574	0.469
F Value	100.48 ***	82.23 ***	25.42 ***
Sample Size	4,664	3,944	719
Mean Hourly Wage	$7.58	$7.73	$6.88

*** p < .001
** p < .01
* p < .05
−− Estimates could not be made for this variable, because there were no women of color in the sample working in the Mining Industry.
Note: The reference groups for "Occupation", "Industry", and "Region" appear in parentheses: coefficients shown are relative to the value for this reference group.
Note: Asians and Pacific Islanders were excluded from the 1987 data used for anaylsis.

Source: Institute for Women's Policy Research calculations based on regression analysis of the 1987 Survey of Income and Program Participation.

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are held constant, unionization decreases the wage gap between women and men from $3.45 to $2.77. Union women earn 75 cents for every $1.00 earned by union men, while non-union women earn only 68 cents for every $1.00 earned by union men.

In 1987, white women received 91 cents and women of color 87 cents in union wage premiums. In percentage terms, however, women of color gain more from union membership than do white women (just as we found in our earlier study, IWPR 1989). As shown in Table 3, white women gained 12 percent from union membership or coverage while women of color gained 13 percent in 1987. Compared to results from 1984 data and in contrast to white women, women of color appear to be losing ground, slipping from a wage premium of approximately 20 percent due to their union membership. Perhaps this reduced union impact for women of color is related to declining blue collar union membership, since women of color are more likely to have blue collar jobs than are white women. The regression analysis shows white men also have lost (on average) substantial wage premiums attributable to union membership, when other factors are controlled. Membership of coverage by a union contributed only five cents to white men's wages in 1987, whereas, they contributed 41 cents in 1984.[6]

How much does union membership contribute to hourly wages compared to other factors? Figure 5 compares the effects of union status on women's hourly wages to human capital characteristics. The regression models estimate that, in contrast to the union wage premium of 90 cents per hour, each year of additional work experience in the type of work of her primary job in 1987 adds 18 cents per hour. This means that a woman worker would need to be employed for five years in the same job in order to receive the same size wage premium as she

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[6] The 1984 results are found in IWPR (1989) and the 1987 results for men can be obtained from the authors. The small union wage premium in 1987 was not found to be statistically significant, probably because the sample size was substantially smaller.

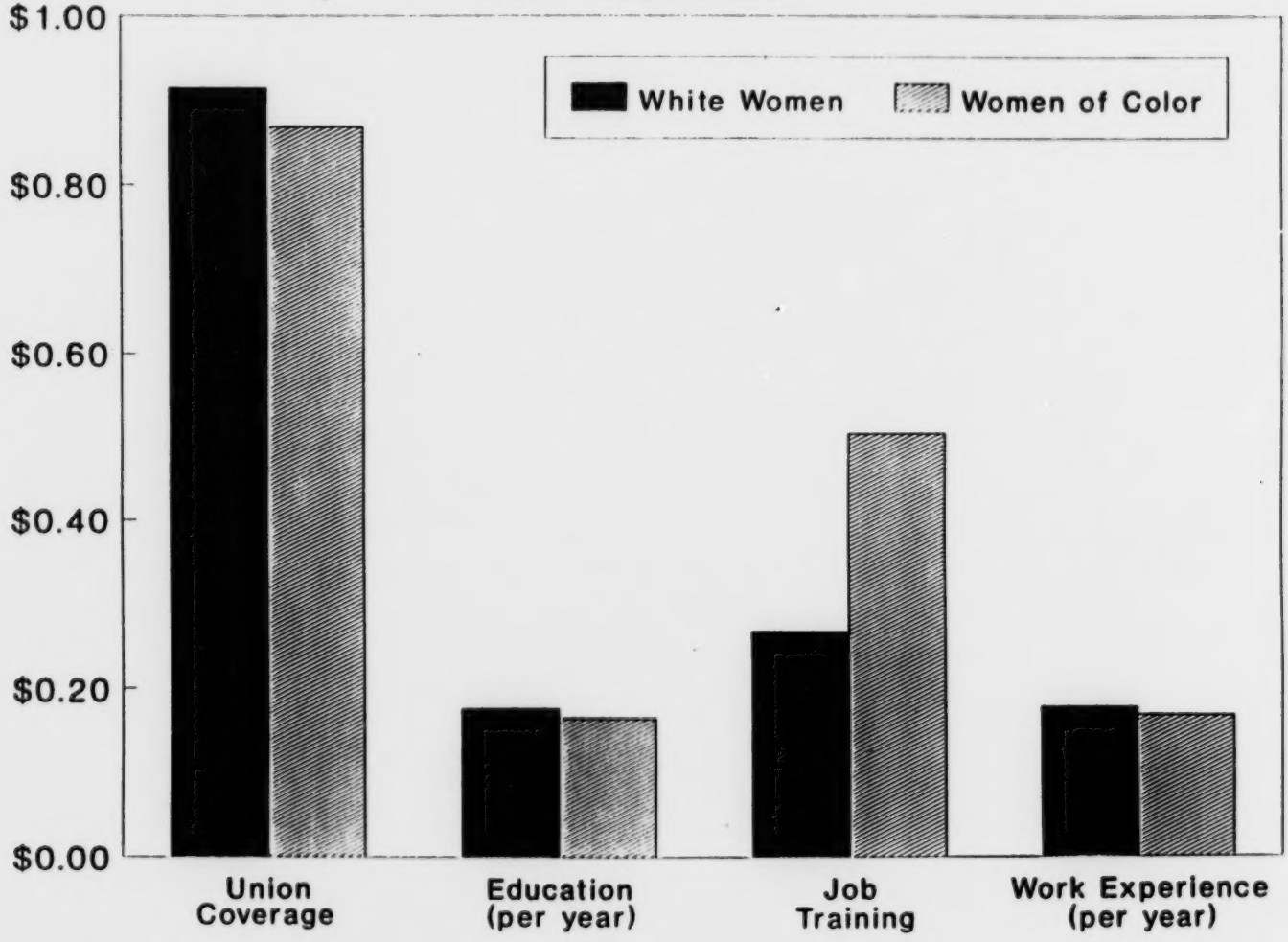
Table 3: Comparison of Union Wage Premiums in 1984 and 1987
(Controlled Results)

Group of Workers	1984				1987			
	Union Wage Premium (in 1984 $)	Estimated Non-Union Mean Wage (in 1984 $)	Percent Premium	Sample Size	Union Wage Premium (in 1987 $)	Estimated Non-Union Mean Wage (in 1987 $)	Percent Premium	Sample Size
TOTAL	$0.61	$7.90	7.7 %	15,815	$0.51	$9.25	5.5 %	9,571
WOMEN	0.72	6.19	11.6	7,289	0.90	7.45	12.1	4,664
White Women	0.68	6.29	10.8	5,963	0.91	7.60	12.0	3,944
Women of Color	u	u	u	u	0.87	6.73	12.9	719
Black Women	1.01	5.55	18.2	814	u	u	u	u
Hispanic Women	1.26	5.49	23.0	354	u	u	u	u
MEN	0.49	9.38	5.2	8,525	0.22 *	10.90	2.0	4,906
White Men	0.41	9.75	4.2	7,218	0.05 *	11.45	0.4	4,244
Men of Color	u	u	u	u	1.43	8.02	17.8	661
Black Men	1.32	6.77	19.5	668	u	u	u	u
Hispanic Men	1.79	7.17	25.0	462	u	u	u	u

* Not significant at the .10 level.
u = Data unavailable.

Source: IWPR calculations based on regression analysis of the 1984 and 1987 Survey of Income and Program Participation.

Figure 5:
What Unions Do For Women's Wages
Union Coverage, Years of Education, Formal Job Training, and Years of Experience Impact on Hourly Wages, 1987
(Controlled Results)



Source: Institute for Women's Policy Research calculations based on regression analysis of the

would receive from union membership. Each year of education completed by women increase wages by 17 cents per hour. Having any formal job training increases wages by 30 cents. Except for job training, the effects of human capital variables did not differ substantially between white women and women of color (in absolute terms, though in percentage terms, education and experience increase wages more for women of color than they do for white women). Women of color received significantly greater rewards from job training (50 cents per hour compared to 27 cents an hour received by white women). These findings show unionization has a greater impact on women's hourly wages than these individual level human capital variables.

The Relative Impact of Other Factors. Along with union membership, occupation and industry are unquestionably important in determining women's hourly wages. Compared to employment in professional and managerial occupations, employment in technical, sales, and administrative occupations, service occupations, and blue collar occupations negatively impact women's wages, decreasing wages by $1.54, $2.24, and $2.36, respectively (see Table 2). The results were similar for both white women and women of color. Compared to employment in the manufacturing industry, employment in the mining industry and in the transportation and other public utilities industry brought the greatest benefits to women's wages. Working in the mining industry increased women's wages by $3.83, but there were a relatively small number of cases in the sample. Working in the transportation industry increased women's wages by $3.43 per hour. The finance, insurance and real estate industries increased women's wages by 54 cents an hour, compared to manufacturing. Industries that have negative effects on women's wages compared to manufacturing are retail trade (-$1.15), personal services (-$1.43), and all other services (-$0.71). Though there appears to be no negative or positive effect from working in the wholesale industry for white women, women of color are negatively impacted by $2.18 per hour.

Other factors that had a large impact on wages include the number of hours worked in 1987, whether there were more than 100 employees at the work site, and whether the firm employed fewer than 25 workers. Working at a large work site (greater than 100 employees) contributed $1.04 to hourly wages for all women. White women benefitted more from this situation, however, adding $1.12 to their wages compared to 69 cents for women of color. Working for a firm with fewer than 25 employees negatively impacted the wages of women. White women lost 32 cents when working for a small firm, while for women of color the results were inconclusive, suggesting that working for a small firm does not have any positive or negative effects on their wages. Each additional 1,000 hours of employment increased women's hourly wages by 67 cents. In other words, working full-time (2,000 hours) increases earnings by 67 cents per hour compared to working half-time (1,000 hours). Women of color benefit more from added hours worked receiving a premium of 90 cents per hour for full-time rather than part-time work.

Age affects wages similarly to its effects in other studies, with each year having a positive effect on wages though at a decreasing rate. Surprisingly, family status did not affect women's wages. Neither being married with the spouse present nor having at least one child under 6 years old affected the amount of wages received by women (see Table 2).

With the West as our reference group, the results show regional differences in the pay received by women. Women receive more hourly pay working in the North, 44 cents, and less hourly pay working in the South or Midwest, 71 cents and 76 cents less respectively.

In sum, although women's wages are significantly affected by their hours of work, their human capital, and their distribution among occupations, industries, firms and regions, the

independent net effect of unionization is strong and positive.

UNION EFFECTS ON WAGES BY EDUCATION

We have just seen the net independent effects of union membership and education on women's wages. Next, we examine the relationship between these two factors. Does union membership provide greater rewards for more or less highly educated union workers? Figure 6 shows that (uncontrolled or gross) union wage premiums are greater among workers with less education than among those with more. Unions, thus, appear to compress wage differences across educational levels. For women workers, union wage premiums range from a high of 45 percent for those with less than a high school diploma to a low of 14 percent for those with a college diploma or more. For men, the union wage premiums are likewise greater at the bottom (59 percent for those who lack a high school diploma) and smaller at the top (-9 percent for a college diploma or more). For non-union women and men, the hourly wage of the college graduate is more than twice the wage of the high school drop out; among union workers, the range drops to 29 percent greater among men and 65 percent greater among women (see Appendix Table 6, Median Hourly Wages by Education Level and Union Status). While union workers of both sexes appear to have more equal wages across education levels than do non-union workers, it does appear that the top educated women gain more from unions than the top educated men (who appear to lose in this analysis in which other factors are not controlled). This finding suggests that unions help well-educated women obtain wage rewards for their education, but that men are less dependent on unions for these gains.[7]

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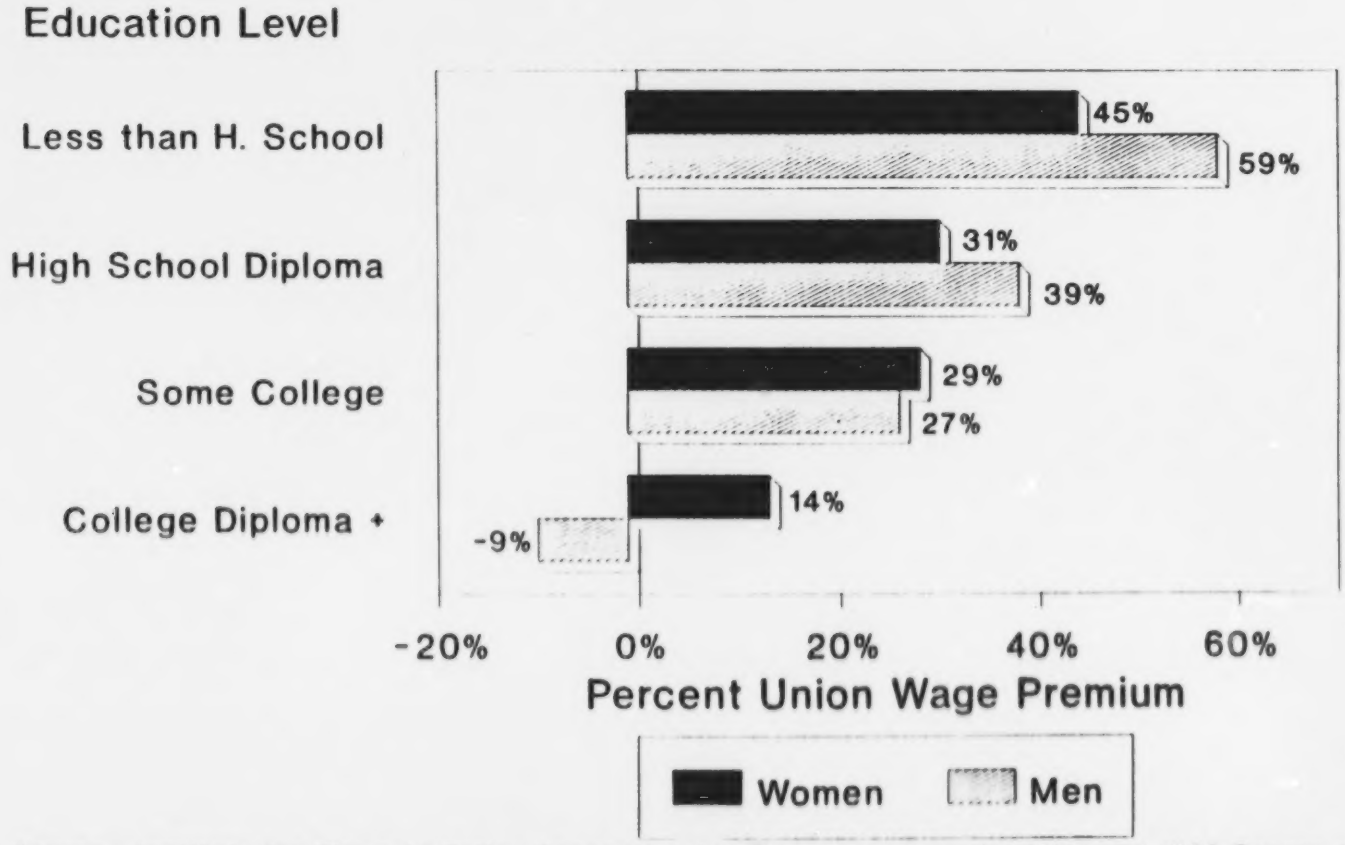
[7] We tested this finding in an additional regression model (available from the authors) in which education and union membership were included as a joint variable, which confirmed the uncontrolled results. The regression results show that the interaction between education and unionization was

Figure 6:
Union Wage Premium for Education Level
(Uncontrolled Results)



Source: Institute for Women's Policy Research tabulations based on the 1986 and 1987 Survey of Income and Program Participation.

THE IMPACT OF UNIONIZATION ON JOB TENURE

Researchers who are concerned about declining rates of unionization have suggested that union membership not only increases workers' wages but also increases the productivity of workers. Union workplaces are thought to reward job tenure, and increased job tenure (seniority) is found by these researchers to result in the increased productivity of a more experienced workforce and to encourage investment (in technology and training) in this more stable workforce. As noted, most of these studies are based on largely male, blue collar workers. Here, we consider the relation between tenure and union status for women in our sample, examining whether the positive relation between tenure and union membership found by other researchers is found among low-wage as well as higher wage workers. If this is the case, then encouraging collective bargaining can lead to increased job tenure, productivity, and wages in currently low-productivity, low-wage service industries, where women are disproportionately employed.

UNCONTROLLED RESULTS

The uncontrolled results in Table 4 show that, among all women workers, union members have more than twice the median years of job tenure of non-union workers (8.3 years compared to 4.0). Table 4 also shows that low-wage women workers (defined as earning less than $5.80

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negatively correlated to men's wages. When we added the interaction term of union status and years of education to the wage models, we found the additional years of education for a male union member actually decreases the amount of wages received by 14 cents. The interaction term for a woman union member was not found to be significant at the .05 level, suggesting that women union members are not adversely impacted as men are by increased years of education. This supports our conclusions that union women gain more from their educational background than union men.

Table 4: Percentage Distribution of Union and Non-Union Workers by Job Tenure, 1987
(Uncontrolled Results)

	WOMEN			MEN		
	All	Non-Union	Union	All	Non-Union	Union
ALL WORKERS						
Number of Workers	38,630,000	30,770,000	6,160,000	43,920,000	31,170,000	11,030,000
Total	100.0	100.0	100.0	100.0	100.0	100.0
Less than 1 year	7.9	8.2	3.4	6.2	6.6	3.3
1 to less than 2 years	17.8	18.5	9.7	15.6	17.0	8.5
2 to less than 4 years	19.7	21.1	15.0	17.8	20.0	12.6
4 to less than 10 years	27.1	27.7	28.7	24.9	26.9	21.8
10 or more years	22.5	19.9	40.7	31.8	26.1	51.7
Median Job Tenure	4.3 years	4.0 years	8.3 years	6.0 years	4.8 years	11.0 years
Observations with missing Tenure	5.0	4.6	2.6	3.6	3.4	2.1
LOW-WAGE WORKERS						
Number of Workers	12,760,000	11,220,000	750,000	65,700,000	5,650,000	330,000
Total	100.0	100.0	100.0	100.0	100.0	100.0
Less than 1 year	11.6	11.2	7.7	12.7	12.9	2.6
1 to less than 2 years	25.7	25.1	23.9	27.8	26.7	31.3
2 to less than 4 years	23.8	25.1	18.7	23.7	24.6	21.3
4 to less than 10 years	20.6	21.3	25.3	18.7	20.3	17.8
10 or more years	10.0	9.9	20.6	8.4	8.3	20.1
Median Job Tenure	2.5 years	2.6 years	3.6 years	2.3 years	2.3 years	3.4 years
Observations with missing Tenure	8.3	7.3	3.8	8.7	7.1	6.8
HIGH-WAGE WORKERS						
Number of Workers	17,970,000	13,440,000	4,050,000	30,910,000	20,910,000	927,000
Total	100.0	100.0	100.0	100.0	100.0	100.0
Less than 1 year	4.6	4.7	2.5	4.1	4.1	2.9
1 to less than 2 years	12.9	13.6	7.7	11.6	13.0	6.8
2 to less than 4 years	16.3	17.4	13.7	16.0	18.1	11.8
4 to less than 10 years	31.1	32.4	29.2	26.7	29.3	22.2
10 or more years	32.3	29.2	45.4	39.3	33.4	54.8
Median Job Tenure	6.7 years	6.1 years	9.3 years	7.8 years	6.6 years	11.7 years
Observations with missing Tenure	2.7	2.6	1.6	2.2	2.1	1.5

Note: Low-Wage workers are those who earned an average hourly wage of less than $5.80 for at least 7 months out of the year; high wage workers are those who earned an average hourly wage less than $5.80 only 1 month or never.

Source: IWPR tabulations based on the 1986 and 1987 Survey of Income and Program Participation.

per hour in 1987 dollars) have substantially lower job tenure than higher wage workers, regardless of union status. But unionized low-wage women workers have an additional year of job tenure compared to their non-union counterparts (3.6 years compared to 2.6 years, respectively). The distribution of women across the years of tenure categories shows that among low-wage unionized women workers, twice the proportion of workers have 10 years job tenure or more, than among the low-wage non-union women. These data suggest that, although low-wage union women do not receive a wage premium that moves them into the category of higher wage workers, they do gain job security, and employers may gain increased productivity from these women's additional years of job tenure.

Among higher wage women, unionized women workers have about three additional years of tenure compared to their non-union counterparts (9.3 as compared to 6.1 years). For men, the union impact on additional years of tenure is greater than for unionized women workers (an additional six years as compared to an additional four years). This tenure gap between unionized men and women is found among the high-wage workers, but disappears among low-wage workers. Unionized low-wage workers have an additional year of job tenure compared to their non-union counterpart regardless of gender.

CONTROLLED RESULTS

For further analysis of the impact of unionization on women's years of job tenure, we use statistical regression techniques similar to those used for the wage regression model (OLS), to estimate the importance of coverage by collective bargaining, relative to other factors, in increasing years of job tenure. In other words, our regression model estimates the number of

years each variable contributes to the total years of tenure for an individual (see Table 5).[8] The OLS model tests the impact of various human capital characteristics, work related information (including union status, firm size, hours worked, occupation, and industry), and demographic information on women's years of job tenure (see the technical appendix for a description of job tenure).

Table 5 provides the results of the predictive equations for 1987.[9] The parameter estimates listed in Table 5 are estimates of the years of tenure each variable contributes to the average job tenure in 1987. Here again, separate models were calculated for white women and women of color. All estimated parameters which we are reasonably certain are different from 0 (statistically significant at the .05 level) are marked with asterisks.

The Relative Impact of Unions. When other factors are held constant, being a member of a union or covered by collective bargaining increases the years of job tenure by 1.2 years for all women workers. The effect of unionization on white women's job tenure is 1.3 years. For women of color, our research shows a smaller effect, 0.8 years, but does not find this effect to be statistically significant (probably because of the smaller sample size for women of color).

Table 6 compares the (controlled) tenure premiums gained through unionization for men and women. Women gain less tenure from union coverage than do men (1.2 years of job tenure compared to 1.6 years). When we convert these tenure premiums into percentage terms (as a percentage of the mean years of tenure for non-unionized workers), we find that being a member

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[8] For the reasons stated in the discussion of the wage model, the data for this analysis are limited to the 1987 SIPP panel and Asian Americans are excluded.

[9] Regression results for men are available from the authors.

Table 5: Predicting Years of Job Tenure for Women Workers by Race, 1987
(Controlled Results)

Independent Variables	Parameter Estimates: All Women	White Women	Women of Color
Intercept	−8.444 ***	−8.209 ***	−9.007 ***
Union Status	1.223 ***	1.294 ***	0.802
HUMAN CAPITAL			
Years of Education Completed	−0.030 *	−0.030	−0.043
Years of Additional Work Experience	−0.445 ***	−0.439 ***	−0.463 ***
Years of Additional Experience Squared	0.008 ***	0.008 ***	0.009 ***
Any Job Training	−0.174	−0.201	−0.072
JOB CHARACTERISTICS			
Average Hourly Wage	0.251 ***	0.232 ***	0.378 ***
Hours Worked / 1,000	1.164 ***	1.215 ***	0.997 **
Work Site greater than 100 Employees	0.316 *	0.359 *	−0.030
Firm Size less than 25 Employess	0.068	−0.005	0.372
Months of Health Insurance	0.063 ***	0.055 **	0.073
% of Women in Occupation	0.022 ***	0.021 ***	0.027 ***
% of Women in Industry	0.007	0.012 *	−0.010
OCCUPATIONS (Professional/Managerial)			
Technical, Sales, and Administrative	−0.258	−0.305	0.009
Service	0.141	−0.035	0.767
Blue Collar	−0.494	−0.219	−1.409
INDUSTRY (Manufacturing)			
Mining	5.016 ***	5.302 ***	--
Construction	0.463	0.693	−1.749
Transportation & Other Public Utilities	0.777	0.540	1.139
Wholesale Trade	−0.401	−0.379	0.141
Retail Trade	0.243	0.134	0.586
Finance, Insurance, and Real Estate	−0.542	−0.609	−0.500
Service, excluding Personal	−0.238	−0.253	−0.674
Personal Service	−0.971 *	−1.123 *	−1.333
Public Administration	−0.201	0.175	−1.578
DEMOGRAPHICS			
Age	0.232 ***	0.227 ***	0.261 ***
Black or Hispanic Women	0.373 *		
Married With Spouse Present	0.270	0.325	−0.116
At Least 1 Child under 6	0.284	0.421 *	−0.121
REGION (Western Resident)			
Southern Resident	0.914 ***	0.669 **	1.824 ***
Northern Resident	0.278	0.144	0.679
Midwestern Resident	0.793 ***	0.609 **	1.698 **
Adjusted R−Squared	0.5292	0.5156	0.5951
F Value	170.09 ***	140.92 ***	37.44 ***
Sample Size	4,664	3,944	719
Mean Years of Job Tenure	6.0	6.0	6.3

*** p < .001
** p < .01
* p < .05
-- Estimates could not be made for this variable, because there were no women of color in the sample working in the Mining Industry.
Note: The reference groups for "Occupation", "Industry", and "Region" appear in parentheses: coefficients shown are relative to the value for this reference group.
Note: Asians and Pacific Islanders were excluded from the 1987 data used for anaylsis.

Source: Institute for Womens's Policy Research calculations based on regression analysis of the 1987 Survey of Income and Program Participation.

Table 6: Percent Increase in Years of Job Tenure Due to Union Membership, 1987
(Controlled Results)

Group of Workers	Women				Men			
	Union Tenure Premium (in years)	Estimated Non–Union Mean Tenure (in years)	Percent Premium	Sample Size	Union Tenure Premium (in years)	Estimated Non–Union Mean Tenure (in years)	Percent Premium	Sample Size
All Workers	1.22 yr.	5.87 yr.	20.8 %	4,664	1.64 yr.	7.77 yr.	21.1 %	4,906
Low Wage Workers	0.64 *	4.14	15.5	1,281	0.68 *	4.24	16.0	551
High Wage Workers	1.04	8.20	12.7	1,974	1.29	9.95	13.0	3,177

* Not significant at the .10 level.

Note: Low wage workers are those who earned an average hourly wage of less than $5.80 for at least 7 months out of the year; high wage workers are those who earned an average hourly wage less than $5.80 only 1 month or never.

Source: The Institute for Women's Policy Research calculations based on regression analysis of the 1987 Survey of Income and Program Participation.

of a union or being covered by collective bargaining increases women's years of tenure by 21 percent. These results are comparable to the tenure premiums gained by men. This suggests that unions increase, in percentage terms, the years of tenure equally among the sexes, but do not bring lower years of job tenure for union women up to the levels for union men.

This same pattern across the sexes appears when we look at low-wage and high wage workers. Low-wage women and men workers, those receiving an average hourly wage less than $5.80 for seven or more months in 1987, obtain approximately a 16 percent increase in the years of tenure due to union coverage. High wage workers, those receiving an average hourly wage less than $5.80 only 1 month or never in 1987, do not benefit as much from union coverage as low-wage workers, receiving approximately a 13 percent increase. In percentage terms, low-wage workers gain more tenure from unionization than high wage workers.

The Relative Impact of Other Factors. Although increased human capital characteristics had a positive impact on wages in our wage model, these same patterns do not appear in our tenure model (see Table 5). Overall, human capital characteristics had either negative or no impact on the overall job tenure for women.

Likewise, in contrast to the results of the wage model, occupation and industry do not seem important in determining years of job tenure for women. None of the occupational variables, and only two of the industry variables; mining and personal service, were significant at the .05 level. Workers in the mining industry show large gains, 5.02 years, in job tenure, however, there were a relatively small number of cases and this sample may not be representative. Personal Service showed losses of nearly 1 year, (.97) in job tenure for women.

In contrast to human capital characteristics, occupation, and industry, the specific characteristics of the job worked in 1987 had positive impacts on the years of job tenure for

women. Each dollar of a women's average hourly wage increases tenure by a quarter of a year. In other words, women earning $9.80 per hour are likely to have an additional year of job tenure than women earning $5.80 per hour. Women of color with comparable wages are likely to have an additional year and a half of job tenure. Each additional 1,000 hours of employment in 1987 contributed 1.2 years to average job tenure. White women benefitted more from the hours worked, receiving an additional 1.2 years per 1,000 hours, while women of color received 1 additional year of tenure. At work sites with more than 100 employees, tenure for white women is increased by .3 years. For all women, no significant results were obtained for working for firms with less than 25 employees. The number of months of health insurance provided by the employer contributed .055 years to white women's tenure. In other words, if a white woman receives 12 months of employee provided health benefits, then her tenure is increased by .7 years. Women of color do not appear to have greater tenure as a result of receiving health benefits. The percent of women dominating a particular occupation contributes approximately .02 years to the tenure of white women and women of color. In other words, if a women works in an occupation in which 75 percent of the workers are women, then tenure is increased by 1.7 years. The percent of women in a particular industry did not seem to affect tenure.

As expected, age contributes .2 years to job tenure for women. Being black or hispanic increased job tenure by .4 years. Our analysis did not find a strong correlation between marriage and job tenure. Surprisingly, since having young children is thought to contribute to women's leaving jobs, a white woman with a child under six received an additional .4 years of tenure on the job compared to a white woman without young children. Perhaps having a young child contributes to job stability. No statistically significant effect for young children is found for women of color.

Residency in southern and midwestern states contributes .9 and .8 years of tenure to women, respectively. For women of color, the contributions made by residency in a southern and midwestern state is more than double that of white women.

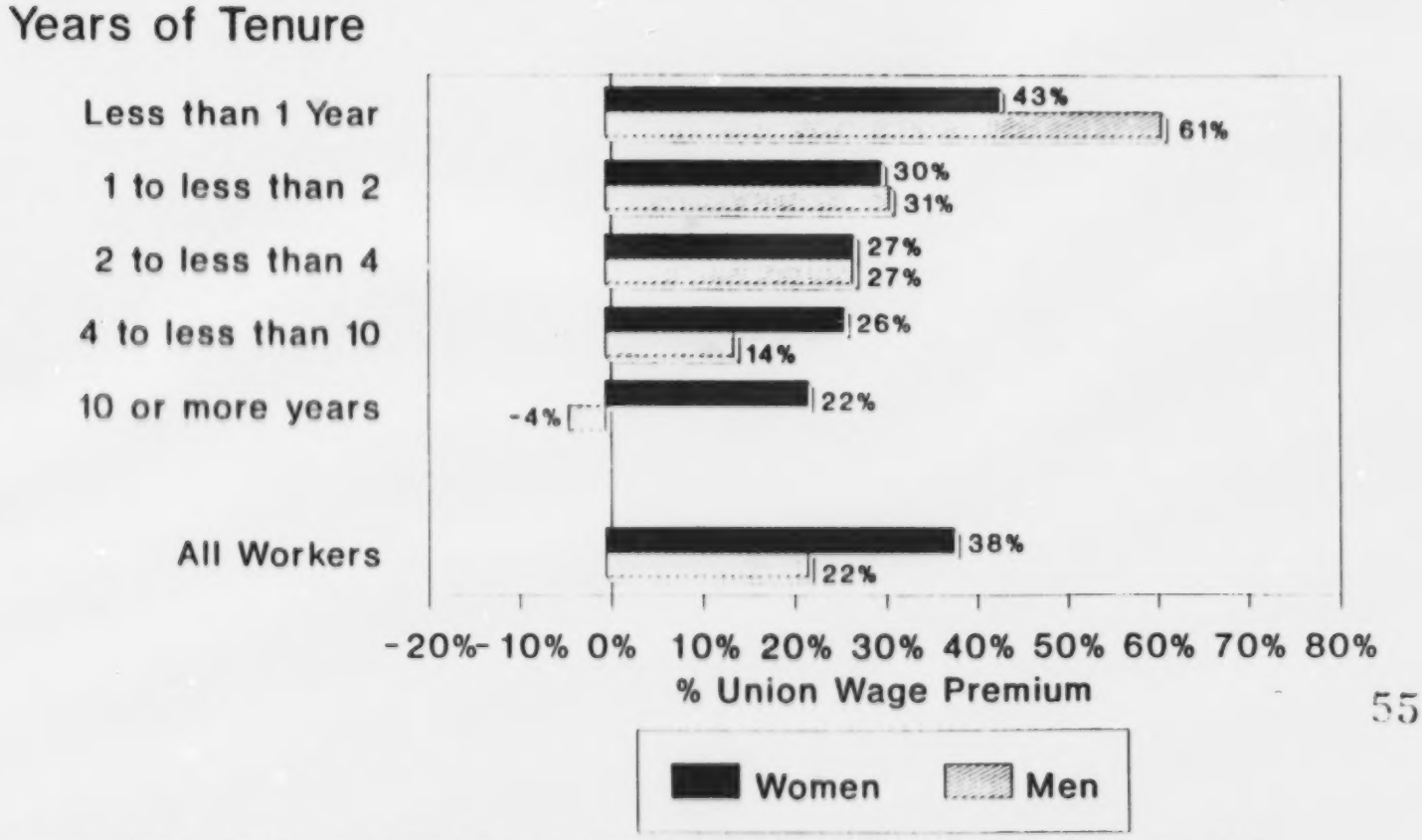
Our results show that, although women's job tenure is also affected by their hourly wages, their hours of work, firm size, and the percentage of women in their occupation, the independent net effect of unions on women's job tenure is strong and positive.

UNION EFFECTS ON WAGES BY TENURE

Our analysis of union wage effects by educational level show that unions appear to decrease wage dispersion across educational levels, bringing up wages at the bottom most. Appendix Table 7 shows that unions bring up the bottom most with respect to wage rewards for years of job tenure as well. Figure 7 shows the union wage premium as a percent of the median non-union hourly wage for women workers as they vary by years of job tenure (the figures shown result from tabulations of the sample data; they represent "gross" or uncontrolled rather than "net" effects of unions on wages and do not statistically eliminate the effects of other factors on wages). The data show that the wage premium varies inversely with years of job tenure. In other words, those workers with the fewest years of job tenure appear to benefit the most from unionization. Union women with less than one year of job tenure gain an uncontrolled premium of 43 percent. As years of tenure increase the union wage premium decreases. For union women with one to two years of job tenure, the union premium falls to 30, while those with 10 or more years receive a smaller union premium of 22 percent.

In additional regression results, this effect is confirmed for the controlled case. The interaction between unionization and years of job tenure is negative; the more tenure the less the

Figure 7:
Union Wage Premium for Years of Tenure
(Uncontrolled Results)



Source: Institute for Women's Policy Research tabulations based on the 1986 and 1987 Survey of Income and Program Participation.

union wage effect, especially for men. Although, unions decrease the pay gap between low and high tenure workers they do this more for men than for women. This finding also suggests that unions help women gain more recognition for their years of experience.

CONCLUSIONS

Decline in union membership is cause for concern for women workers because union membership, or coverage under a collective bargaining agreement, is associated with higher wages for women (compared to their non-union peers). Unions increase women's wages by 12 percent when all other factors are taken into account. For union members, unions decrease the wage gap between men and women from 32 percent to 25 percent. Unions also appear to especially benefit minority women (and men), particularly blacks and Hispanics, in increasing wages. White women gain 12 percent in hourly wages from union membership or representation, while women of color gain 13 percent per hour and men of color gain 18 percent because of unionization. Since families headed by women and minority males are disproportionately poor, increasing earnings for these workers through collective bargaining would help to reduce poverty and increase the standard of living of these families. Unions also appear to reduce wage inequality overall and to bring up wages relatively more for those with fewer years of education and fewer years on the job than for those with more years of education and job tenure.

Unionization is also associated with greater job tenure. Unionized women workers have twice as many years on the job as non-union workers. Among low-wage workers, women union workers have an additional year of job tenure, while among higher wage workers, union women have three more years of job tenure than non-union women. When the effects of union

membership on years of job tenure is controlled statistically for differences in other factors that might affect timing, we find that unions increase job tenure by about 1 year or 20 percent, and increase tenure more (in percentage terms) for low-wage workers than high-wage workers. Our findings show that low-wage women gain job security as well as improved wages when unionized. And employers may reap productivity gains from these more stable, unionized women workers.

If unions are important for women workers, some positive trends are apparent. The number of union women workers is still growing; unionization has shifted to areas (the public sector, nursing, teaching) where women work disproportionately. And the analysis presented here shows that even the *rate* of unionization, not only the number of union workers, increased among high wage women workers between 1984 and 1987. In fact, women's increased representation in unions raises issues of diversity that need to be reflected in union policies and leadership.

As the increased proportion of unionized women in service occupations and industries has changed the face of labor unions, new issues and styles of organizing and bargaining have emerged. Unions with a high proportion of women members (such as AFSCME, SEIU, and CWA) have become active in negotiating for policies and programs that promote pay equity, affirmative action, family leave, child care, and women's awareness of their right to work free of sexual harassment, along with more traditional issues of wages and job security (Cobble, 1993; Eaton, 1992). Local unions comprised of clerical workers or nurses have developed new methods of organizing and bargaining, including "one to one" organizing drives, more flexible "ruleless" contracts that move away from traditional job control unionism, and grievance procedures as problem solving rather than as adversarial processes (Albelda, 1993; Hoerr, 1993;

Eaton, 1992).

The issues and models of employee/employer relations that emerge from the increased participation of women in unions can have a vital impact on the content and style of collective bargaining and the ability of unions to both increase workers' living standards and to increase productivity. But to continue to change the content and style of collective bargaining women need to play a greater part in union leadership. As Albelda (1993) notes, 37 percent of all union members are women, while only eight percent of elected and appointed officials are women. Unions need women to be trained in leadership positions, women's voices need to be represented, and women need to be actively involved in determining issues, organizing, and bargaining strategies if the current 86 percent of women who are not organized or represented by collective bargaining agreements are to benefit from the increased wages, pay equity, and job security that unionization can bring.

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Technical Appendix

Data Set and Variable Definitions

The 1986 and 1987 Panels of the Survey of Income and Program Participation (SIPP) provided the data used for this study. Both panels cover approximately a 32 month period. The data used for our study cover the 12 months in 1987 which are included in both panels.

We have limited our analysis to the individuals in the survey who have the following characteristics:

- Held at least one wage or salary job as their primary job,
- Worked more than 500 hours (this figure combined hours for all jobs held by an individual in 1987),
- Were a part of the civilian/non-agricultural workforce,
- Were between the ages 16 to 64 (teenagers living at home were excluded).

For these individuals, we examine, along with various demographic characteristics, the main job held and information pertaining to this job. The selection criteria and definitions used for this study are based on those used in the study "Low-Wage Jobs and Workers: Trends and Options for Change," which used the 1984 SIPP for analysis (IWPR, 1989). This study, however, differs from the 1984 study in its use of only one job per individual (the primary job held). The 1984 study combined information (i.e. earnings and hours worked) from *all* jobs worked by an individual.

For the primary jobs examined for this study, the following definitions were used to code the jobs for our analysis.

Hourly Wages - Total earnings for the main job held in 1987 was divided by the total hours worked to obtain the hourly wage.

Low Wages - Work is considered low-wage if the hourly wage is less than $5.80 per hour. The amount of $5.80 per hour is considered the poverty level cutoff for a family of four in 1987, because if that hourly wage were worked full-time, year-round, annual earnings would equal the poverty level.

Low-wage Worker - An individual is classified as a low-wage worker if she or he worked at least 7 months in the year, and for 7 or more months, the average wage was *low wage*.

Higher-wage Worker - An individual is classified as a higher-wage worker if she or he worked at least 7 months in the year, and only 0 or 1 months were at *low wages* (the rest being at higher wages).

Intermittent Worker - An individual is classified as an intermittent worker if she or he worked fewer than 7 months in 1987, but still met the minimum requirement of 500 hours for *all* jobs worked. Intermittent workers were excluded from the tabulations produced for this study, because of a lack of information about their union status (50 percent of the cases in this category were missing union status). As a result of this decision, we exclude workers with only a temporary attachment to the workforce during 1987 and focus on those with a more significant attachment.

Health Insurance - The number of months the employee was covered by an employer provided health plan was calculated. Each month the workers were asked if their employer supplied them with health insurance. The health insurance could be supplied by one of two possible jobs listed for the worker. Since we are focusing on the main job held by the worker, it is assumed that the health insurance is supplied by this job (if the job was worked that month).

Occupation - Each month, the SIPP codes an individual's job with a Census Occupation Classification Code. The codes recorded for an individual's job in the 12th month in 1987 were used to create our occupation groupings.

Industry - Each month, the SIPP codes an individual's job with a Census Industry Classification Code. The codes recorded for an individual's job in the 12th month in 1987 were used to create our industry groupings.

Education Level - An individual's education level is measured as years of schooling completed by 1987.

Additional information was needed for the study, but was not included in the 1986 and 1987 SIPP panels. The following information was obtained from topical modules.

Union Status - If the worker was a member of a union or covered by collective bargaining, then their union status was coded "yes," otherwise their union status was coded as "no." Union status was determined for each job from waves 5, 6, and 7 for 1986, and waves 1, 2, and 3 for 1987. There are 713 observations (about 4 percent of the total sample) missing union status for the jobs targeted for our sample.

Job Tenure - Job Tenure was defined as the number of years since the individual began work with her or his main employer through the end of 1987. Job tenure is recorded as a continuous variable (e.g. 1.24 years). Job tenure was obtained from the wave 2 information. The question in that wave asks the employee to identify her or his main employer and list the month and year that employment began with this employer. Since the period we studied for the 1986 panel does not include wave 2, the following assumptions were made in coding job tenure when an individual or a job did not match:

- If there is a match with the wave 2 worker, but there is no match for her of his job, then it is assumed the worker is no longer working with the main employer cited in wave 2 and their job with the largest number of hours worked in 1987 is selected for analysis.

    1) If this job was not held in the first month of 1987, then it is assumed she or he started this job in 1987 and job tenure was considered the total time worked in 1987.

    2) Otherwise, job tenure was approximated by half the maximum time this job could possibly have been held since the job tenure question was asked in wave 2.

- If there is no match with the wave 2 worker, then job tenure is considered missing for this worker. There were 786 observations (about 4.5 percent of the total sample) missing job tenure. Approximately 18 percent of these observations were also missing union status.

Work Experience - An individual's work experience is measured in years that she or he has been doing the kind of work done at their primary job.

Firm Size - The SIPP classifies an individual's firm size into 4 categories; not applicable, fewer than 25 employees, greater than 25 and fewer than 100 employees, and greater than 100 employees. Firm size data were obtained from the wave 4 information. There are 826 observations (about 4.8 percent of the total sample) missing firm size. Approximately 36 percent of these observations are also missing union status.

Work Site Size - The SIPP classifies the size of an individuals place of work into 4 categories; not applicable, fewer than 25 employees, greater than 25 and fewer than 100 employees, and greater than 100 employees. Work site size data were obtained from the wave 4 information.

Methodology for Regression Analysis

The regression analysis consists of two ordinary least squares (OLS) models which point out the importance of unionization in predicting hourly wage and years of job tenure for 1987. Because certain variables were available for only the 1987 panel of the SIPP, the regression models were limited to data from this panel. All regression analysis was performed using SAS programming.

Analysis of Variance Results. To test whether there is a regression relation between the dependent variable and the set of independent variables, we look at the test statistic: $F^* =$ Regression Mean Squared / Error Mean Square. For all variations of the wage model, the probability that there is no regression relationship between the dependent and independent variables is less than .0001. We can conclude, therefore, that wage is related to the various independent variables used for analysis. Performing a similar test for all the variations of the tenure model, we can conclude that years of job tenure are related to the various independent variables used for analysis.

The coefficient of multiple determination, denoted by R^2, measures the proportionate reduction of total variation in the dependent variable associated with the use of the set of independent variables. We use the adjusted R^2 because it adjusts for the number of independent variables in the model. Thus when the various independent variables are considered, the variation in wages is reduced by 37, 36, and 47 percent and the variation in job tenure is reduced by 52, 51, and 59 percent for the all women, white women, and women of color models, respectively.

Estimation of Regression Parameters. The independent variables are evaluated according to the t statistic which tests whether the regression coefficient is equal to 0. If the probability that the parameter estimate is equal to 0 is less than .1, 1, or 5 percent then an asterisk(s) appears next to the parameter estimate on the Regression tables. We conclude that the parameter estimate is not equal to 0, in other words, the independent variable is related to the wages (or years of tenure) received by an individual, if the probability is less than 5 percent (.05).

APPENDIX
TABLES

Appendix Table 1 – Distribution of Union and Non–Union Workers by Occupation, 1987

Occupation	Total		Union*		Non–Union*	
	Workers	Percent	Workers	Percent	Workers	Percent
WOMEN	38,640,000	100.0	6,160,000	100.0	30,780,000	100.0
Executive, Administrative, & Managerial	4,550,000	11.8	310,000	5.0	4,060,000	13.2
Professional Specialty	5,880,000	15.2	1,950,000	31.6	3,690,000	12.0
Technicians & Related Support	1,460,000	3.8	170,000	2.7	1,240,000	4.0
Sales	4,240,000	11.0	310,000	5.1	3,600,000	11.7
Administrative Support	12,060,000	31.2	1,650,000	26.8	9,980,000	32.4
Service	5,980,000	15.5	700,000	11.3	4,910,000	16.0
Private Household Service	460,000	1.2	4,000	0.1	420,000	1.4
Protective Service	180,000	0.5	80,000	1.2	90,000	0.3
Food Preparation & Service	2,180,000	5.6	170,000	2.7	1,890,000	6.1
Health Service	1,560,000	4.0	240,000	3.8	1,220,000	4.0
Cleaning & Building Service (not Household)	910,000	2.3	150,000	2.4	710,000	2.3
Personal Service	700,000	1.8	60,000	1.0	590,000	1.9
Precision Production, Craft, & Repair	950,000	2.5	200,000	3.3	740,000	2.4
Operators, Assemblers, & Fabricators	2,690,000	7.0	680,000	11.1	1,940,000	6.3
Transportation, Handlers, & Laborers	830,000	2.1	190,000	3.1	610,000	2.0
Sample Size	8,294		1,326		6,597	
MEN	43,930,000	100.0	10,030,000	100.0	31,180,000	100.0
Executive, Administrative, & Managerial	6,220,000	14.2	570,000	5.2	5,520,000	17.7
Professional Specialty	5,260,000	12.0	1,120,000	10.2	4,010,000	12.9
Technicians & Related Support	1,630,000	3.7	310,000	2.8	1,260,000	4.1
Sales	4,470,000	10.2	280,000	2.6	3,960,000	12.7
Administrative Support	3,100,000	7.1	970,000	8.8	2,030,000	6.5
Service	4,050,000	9.2	1,180,000	10.7	2,600,000	8.3
Private Household Service	30,000	0.1	0	0.0	30,000	0.1
Protective Service	1,390,000	3.2	670,000	6.0	680,000	2.2
Food Preparation & Service	1,060,000	2.4	120,000	1.0	810,000	2.6
Health Service	130,000	0.3	50,000	0.5	70,000	0.2
Cleaning & Building Service (not Household)	1,290,000	2.9	350,000	3.1	860,000	2.8
Personal Service	150,000	0.3	10,000	0.1	140,000	0.5
Precision Production, Craft, & Repair	9,080,000	20.7	2,910,000	26.4	5,880,000	18.9
Operators, Assemblers, & Fabricators	4,040,000	9.2	1,610,000	14.6	2,270,000	7.3
Transportation, Handlers, & Laborers	6,070,000	13.8	2,070,000	18.8	3,640,000	11.7
Sample Size	8,939		2,277		6,320	

* Union and Non–Union totals do not add to the overall total because of observations with missing union status.
Source: IWPR tabulations based on the 1986 and 1987 Panels of the Survey of Income and Program Participation.

Appendix Table 2 – Distribution of Union and Non–Union Workers by Industry, 1987

Industry Type	Total		Union*		Non–Union*	
	Workers	Percent	Workers	Percent	Workers	Percent
WOMEN	38,640,000	100.0	6,160,000	100.0	30,780,000	100.0
Mining	90,000	0.2	10,000	0.1	80,000	0.3
Construction	410,000	1.1	20,000	0.4	370,000	1.2
Manufacturing	5,790,000	15.0	1,040,000	16.9	4,610,000	15.0
Nondurable Goods	2,870,000	7.4	480,000	7.8	2,310,000	7.5
Durable Goods	2,920,000	7.5	560,000	9.1	2,300,000	7.5
Transportation, Communications, & Other Public Utilities	1,890,000	4.9	720,000	11.6	1,130,000	3.7
Wholesale Trade	980,000	2.5	10,000	0.2	900,000	2.9
Retail Trade	6,640,000	17.2	400,000	6.5	5,770,000	18.7
Finance, Insurance, & Real Estate	3,880,000	10.0	90,000	1.5	3,620,000	11.8
Services	17,150,000	44.4	3,300,000	53.6	13,110,000	42.6
Business & Repair Services	1,610,000	4.2	50,000	0.9	1,490,000	4.9
Personal Services	1,790,000	4.6	80,000	1.3	1,590,000	5.2
Entertainment & Recreation Services	240,000	0.6	30,000	0.5	200,000	0.7
Professional & Related Services	13,500,000	34.9	3,140,000	51.0	9,820,000	31.9
Public Administration	1,820,000	4.7	560,000	9.1	1,200,000	3.9
Sample Size	8,294		1,326		6,597	
MEN	43,930,000	100.0	11,030,000	100.0	31,180,000	100.0
Mining	530,000	1.2	120,000	1.1	400,000	1.3
Construction	3,730,000	8.5	1,150,000	10.5	2,400,000	7.7
Manufacturing	12,820,000	29.2	3,780,000	34.3	8,670,000	27.8
Nondurable Goods	4,320,000	9.8	1,340,000	12.2	2,850,000	9.2
Durable Goods	8,500,000	19.3	2,440,000	22.1	5,820,000	18.7
Transportation, Communications, & Other Public Utilities	4,680,000	10.6	2,010,000	18.2	2,550,000	8.2
Wholesale Trade	2,330,000	5.3	280,000	2.5	1,960,000	6.3
Retail Trade	5,970,000	13.6	700,000	6.4	4,790,000	15.4
Finance, Insurance, & Real Estate	2,080,000	4.7	100,000	0.9	1,890,000	6.1
Services	8,730,000	19.9	1,730,000	15.7	6,640,000	21.3
Business & Repair Services	2,400,000	5.5	190,000	1.7	2,070,000	6.7
Personal Services	640,000	1.4	80,000	0.7	510,000	1.6
Entertainment & Recreation Services	310,000	0.7	50,000	0.5	230,000	0.7
Professional & Related Services	5,390,000	12.3	1,400,000	12.7	3,840,000	12.3
Public Administration	3,060,000	7.0	1,140,000	10.4	1,860,000	6.0
Sample Size	8,939		2,277		6,320	

* Union and Non–Union totals do not add to overall totals because of observations with missing union status.
Source: IWPR tabulations based on the 1986 and 1987 Panels of the Survey of Income and Program Participation.

Appendix Table 3 – Distribution of Union and Non–Union Workers by Firm Size, 1987

Firm Size	Total		Union*		Non–Union*	
	Workers	Percent	Workers	Percent	Workers	Percent
WOMEN	38,640,000	100.0	6,160,000	100.0	30,780,000	100.0
Fewer than 25 employees	7,500,000	19.4	170,000	2.7	7,130,000	23.1
25 to 99 employees	4,210,000	10.9	480,000	7.8	3,590,000	11.7
100 or more employees	24,170,000	62.6	5,410,000	87.8	18,260,000	59.3
Not Applicable Code	720,000	1.9	20,000	0.4	560,000	1.8
Observations with Missing Firm Size	2,030,000	5.3	80,000	1.2	1,250,000	4.1
Sample Size	8,294		1,326		6,597	
MEN	43,920,000	100.0	11,030,000	100.0	31,180,000	100.0
Fewer than 25 employees	7,130,000	16.2	670,000	6.0	6,200,000	19.9
25 to 99 employees	5,530,000	12.6	1,090,000	9.9	4,310,000	13.8
100 or more employees	28,630,000	65.2	9,050,000	82.0	19,110,000	61.3
Not Applicable Code	690,000	1.6	50,000	0.5	480,000	1.6
Observations with Missing Firm Size	1,950,000	4.4	170,000	1.6	1,080,000	3.5
Sample Size	8,939		2,277		6,320	

* Union and Non–Union totals do not add to the overall totals because of observations with missing union status.
Source: IWPR tabulations based on the 1986 and 1987 Panels of the Survey of Income and Program Participation.

Appendix Table 4 – Distribution of Union and Non–Union Workers by Education, 1987

Education	Total		Union*		Non–Union*	
	Worker	Percent	Worker	Percent	Worker	Percent
WOMEN	38,640,000	100.0	6,160,000	100.0	30,780,000	100.0
Less than High School	4,840,000	12.5	760,000	12.3	3,860,000	12.5
High School Diploma	14,740,000	38.1	2,060,000	33.4	12,160,000	39.5
Some College	11,290,000	29.2	1,360,000	22.0	9,320,000	30.3
College Diploma or More	7,780,000	20.1	1,990,000	32.3	5,440,000	17.7
Sample Size	8,294		1,326		6,597	
MEN	43,930,000	100.0	11,030,000	100.0	31,180,000	100.0
Less than High School	7,090,000	16.1	1,830,000	16.6	4,970,000	15.9
High School	15,130,000	34.5	4,860,000	44.1	9,680,000	31.0
Some College	11,380,000	25.9	2,670,000	24.2	8,150,000	26.1
College or More	10,310,000	23.5	1,670,000	15.1	8,380,000	26.9
Sample Size	8,939		2,277		6,320	

* Union and Non–Union totals do not add to the overall total because of observations with missing union status.
Source: IWPR tabulations based on the 1986 and 1987 Panels of the Survey of Income and Program Participation.

Appendix Table 5 – Distribution of Union and Non–Union Workers by Average Hourly Wages, 1987
(Uncontrolled Results)

Wages	Total		Union*		Non–Union*	
	Workers	Percent	Workers	Percent	Workers	Percent
WOMEN	36,950,000	100.0	6,160,000	100.0	30,780,000	100.0
Less than $5.80	14,140,000	36.6	970,000	15.8	12,220,000	39.7
$5.80 to $8.69	12,180,000	31.5	1,870,000	30.4	9,890,000	32.1
$8.70 to $11.59	6,610,000	17.1	1,640,000	26.6	4,790,000	15.6
$11.60 to $14.49	3,200,000	8.3	930,000	15.1	2,170,000	7.1
$14.50 to $17.39	1,450,000	3.8	500,000	8.1	920,000	3.0
$17.40 to $20.29	540,000	1.4	130,000	2.1	400,000	1.3
Greater than $20.30	520,000	1.4	120,000	1.9	390,000	1.3
Q3–Q1	$4.91		$4.99		$4.57	
Median Hourly Wage	$6.98		$9.15		$6.65	
(Q3–Q1)/median (as a percent)	70.3		54.5		68.6	
MEN	42,200,000	100.0	11,020,000	100.0	31,180,000	100.0
Less than $5.80	7,540,000	17.2	430,000	3.9	6,380,000	20.5
$5.80 to $5.70	9,740,000	22.2	1,750,000	15.9	7,500,000	24.1
$8.70 to $11.60	8,840,000	20.1	2,940,000	26.6	5,690,000	18.2
$11.60 to $14.50	7,320,000	16.7	3,240,000	29.4	3,980,000	12.8
$14.50 to $17.40	4,520,000	10.3	1,510,000	13.7	2,930,000	9.4
$17.40 to $20.30	2,650,000	6.0	700,000	6.4	1,910,000	6.1
Greater than $20.30	3,300,000	7.5	460,000	4.2	2,780,000	8.9
Q3–Q1	$7.49		$5.00		$8.24	
Median Hourly Wage	$10.50		$12.03		$9.84	
(Q3–Q1)/median (as a percent)	71.4		41.6		83.7	

* Union and Non–Union totals do not add to the overall total because of observations with missing union status.
Source: IWPR tabulations based on the 1986 and 1987 Panels of the Survey of Income and Program Participation.

Appendix Table 6 – Median Hourly Wages by Education Level and Union Status, 1987
(Uncontrolled Results)

Education	Median Hourly Wages in 1987			Union Wage Premium*	Premium as % of Non–Union**	Total Sample Size
	Total	Union	Non–Union			
WOMEN	$6.98	$9.15	$6.65	$2.50	37.6	8,294
Less than High School	$4.99	$6.82	$4.71	$2.11	44.7	987
High School Diploma	$6.29	$8.00	$6.10	$1.90	31.1	3,153
Some College	$7.28	$9.15	$7.11	$2.05	28.8	2,386
College Diploma or More	$10.29	$11.28	$9.92	$1.35	13.6	1,768
MEN	$10.50	$12.03	$9.84	$2.19	22.2	8,939
Less than High School	$7.56	$10.59	$6.66	$3.93	59.0	1,347
High School	$9.67	$11.81	$8.50	$3.31	38.9	3,054
Some College	$10.44	$12.44	$9.77	$2.67	27.3	2,288
College or More	$14.57	$13.69	$14.99	($1.31)	–8.7	2,250

* The difference between union and non–union median hourly wages.

** The union wage premium as a percent of the non–union hourly wage.

Source: IWPR tabulations based on the 1986 and 1987 Panels of the Survey of Income and Program Participation.

Appendix Table 7 – Median Hourly Wages by Job Tenure and Union Status, 1987

(Uncontrolled Results)

Job Tenure	Median Hourly Wages in 1987			Union Wage Premium*	Premium as % of Non–Union**	Total Sample Size
	Total	Union	Non–Union			
WOMEN	$6.98	$9.15	$6.65	$2.50	37.6	7,858
Less than 1 year	$5.25	$7.44	$5.21	$2.23	42.9	632
1 to less than 2 years	$5.76	$7.32	$5.63	$1.69	30.1	1,460
2 to less than 4 years	$6.34	$7.77	$6.12	$1.65	27.0	1,610
4 to less than 10 years	$7.54	$9.17	$7.27	$1.90	26.2	2,261
10 or more years	$9.11	$10.44	$8.58	$1.85	21.6	1,895
MEN	$10.50	$12.03	$9.84	$2.19	22.3	8,588
Less than 1 year	$7.01	$10.48	$6.50	$3.98	61.3	529
1 to less than 2 years	$7.65	$9.78	$7.44	$2.33	31.3	1,350
2 to less than 4 years	$9.00	$11.01	$8.64	$2.37	27.4	1,553
4 to less than 10 years	$10.61	$11.59	$10.21	$1.37	13.5	2,189
10 or more years	$13.00	$12.82	$13.37	($0.55)	–4.1	2,967

* The difference between union and non–union median hourly wages.

** The union wage premium as a percent of the non–union median hourly wage.

Source: IWPR tabulations based on the 1986 and 1987 Panels of the Survey of Income and Program Participation.